

REMARKS/ARGUMENTS

Favorable reconsideration of this application as presently amended and in light of the following discussion is respectfully requested.

Claims 1, 2, 7-11 and 14 are pending in this application. Claims 1, 2, 7, 10, 11 and 14 are amended, and Claims 5, 6, 12 and 13 are canceled by the present amendment without prejudice or disclaimer.

Applicants respectfully submit that claim amendments find support in the claims as originally filed. Thus, no new matter is added.

In the outstanding Office Action, Claims 1, 2, 5 and 10-12 were rejected under 35 U.S.C. § 103(a) as unpatentable over Yamakoshi et al. (U.S. Publication No. 2001/0021422, herein "Yamakoshi '422") in view of Murata et al. (European Publication No. EP 0955665 A2, herein "Murata") and Yamakoshi et al. (U.S. Patent No. 6,417,079, herein "Yamakoshi '079"); and Claims 6, 7, 13 and 14 were rejected under 35 U.S.C. § 103(a) as unpatentable over Yamakoshi '422 in view of Murata, Yamakoshi '079 and Himori et al. (U.S. Publication No. 2002-0134508, herein "Himori").

Applicants respectfully traverse the rejection of Claims 1, 2, 5 and 10-12 as unpatentable over Yamakoshi '422 in view of Murata and Yamakoshi '079. Claims 1 and 10, and Claims 2 and 11 are amended to include the subject matter of Claims 13 and 6, respectively. As conceded by the outstanding Office Action, the combination of Yamakoshi '422, Murata, and Yamakoshi '079 does not teach or suggest the subject matter of Claims 6 and 13¹. However, Applicants respectfully traverse the assertion in the Office Action that Himori teaches this feature and that one of skill in the art would be motivated to combine these references to achieve the presently claimed invention.²

¹ See the outstanding Office Action at page 6, lines 9-12.

² See the outstanding Office Action at page 6, line 13 to page 7, line 2.

Amended Claim 1 is directed to an apparatus for plasma processing that includes,
inter alia:

...a voltage distribution regulator configured to adjust a deviation in distribution of voltage on the discharge electrodes, the distribution of voltage occurring in a direction at right angles to a direction of fed electric power through the discharge electrodes,

wherein the voltage distribution regulator is an impedance changer which is provided to at least one of a plurality of high-frequency cables for supplying high-frequency electric power from at least a high-frequency electric power feeding circuit to the plurality of discharge electrodes in order to change an impedance at a feeding point for the discharge electrodes toward the high-frequency electric power feeding circuit, and

the impedance changer is a stub including a branch cable which branches off from the high-frequency cable, and with a change in a cable length of the branch cable, the stub changes the impedance at a feeding point for the discharge electrodes toward the high-frequency electric power feeding circuit.

Amended Claim 2 is directed to an apparatus for plasma-enhanced chemical vapor deposition with similar features, and amended Claims 10 and 11 recite a method with corresponding features.

By utilizing a stub to change an impedance at a feeding point for the discharge electrodes by changing the length of the branch cable as described above, amended Claim 1 advantageously provides an indirect means for adjusting the voltage on an electrode. To this end, the presently claimed invention eliminates the need to provide a passive element on the electrode, and to evacuate the inside of a chamber each time an element on an electrode is adjusted.

Turning to the applied reference, Himori describes a matching unit for matching the impedance of a high frequency load to transmission path impedance, and a corresponding

plasma processing system.³ Figure 17 of Himori illustrates a matching unit that adjusts impedance by “moving short-circuiting elements 133 on two or more adjusting lines 132 having coaxial cable structures.”⁴ However, Applicants respectfully submit that Himori is completely silent regarding **changing a length of the branch cable** to adjust the impedance at a feeding point for the discharge electrodes.

To this end, only Applicants’ disclosure teaches a relationship between circuit constants of a feeding circuit (such as “the cable length of the branch cable” and “the characteristic impedance of the branch cable itself”) and wavelengths. As such, by adjusting the length of the branch cable, the stub changes the impedance at a feeding point for the discharge electrodes. Thus, Applicants respectfully submit that Yamakoshi ‘422, Murata, Yamakoshi ‘079 and Himori, whether taken individually or together fail to teach or suggest “the impedance changer is a stub including a branch cable which branches off from the high-frequency cable, and with a change in a cable length of the branch cable, the stub changes the impedance at a feeding point for the discharge electrodes toward the high-frequency electric power feeding circuit,” as recited in amended Claims 1 and 2, and as similarly recited in Claims 10 and 11. As such, Yamakoshi ‘422, Murata, Yamakoshi ‘079 and Himori each fail to achieve the claimed structure and the advantages of the presently claimed invention.

Therefore, Applicants respectfully submit that amended Claims 1, 2, 10 and 11 patentably define over Yamakoshi ‘422 in view of Murata, Yamakoshi ‘079 and Himori.

Although different in scope or statutory class, amended independent Claims 7 and 14 also patentably define over Yamakoshi ‘422 in view of Murata, Yamakoshi ‘079 and Himori for at least the same reasons discussed above for Claim 1.

Accordingly, Applicants respectfully submit that independent Claims 1, 2, 7, 10, 11 and 14, and claims depending therefrom, are allowable.

³ See Himori at Abstract.

⁴ Id at paragraph [0010].

Consequently, in light of the above discussion and in view of the present amendment, this application is believed to be in condition for allowance and an early and favorable action to that effect is respectfully requested.

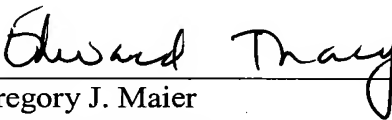
Respectfully submitted,

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